SIGHTS IN WINTER

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Sights in Winter.

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DECEMBER.

This is the eldest of the seasons: he
Moves not, like Spring, with gradual step, nor grow
From bud to beauty, but with all his snows
Comes down at once in hoar antiquity.
No rains, nor loud proclaiming forests flee
Before him, nor unto his time belong
The suns of Summer, nor the charms of song,
That with May's gentle smiles so well agree.
But he, made perfect in his birth-day cloud,
Starts into sudden life with scarce a sound,
And with a tender footstep prints the ground."

PROCTOR.

THE earth, ceaseless in its revolutions, is now approaching the point which is nearest to the sun. We have short days, and the brief period of sunlight is insufficient to continue the temperature of the preceding season. Another, therefore, invites our contemplation; for

" What time the once unnoticed tide,
Fast swelling, rolls a torrent wide;
What time the fields are frequent strown
With scattered leaves of yellow brown;
What time the hawthorn berries glow,
And, touched by frost, the ripened sloe

Less crudely tastes; and when the sheep
Together in the valleys keep;
And all the smaller birds appear
In flocks, and mourn the altered year;
The careful rustic marks the signs
Of winter."

In observing the natural world, there is much that is utterly inexplicable to the feeble powers of fallen man. Of this we are reminded at the present season. We cannot tell, for example, why so many plants now put forth their wintry blossoms, as if to attract the sunshine to the sheltered nooks where they nestle from the cold. We cannot tell why the Glastonbury thorn sometimes blooms at Christmas, while the hawthorn does not flower till the middle or the end of May. We cannot tell why the elder shows its buds bursting into leaf, while the apparently more hardy oak is not in bud till late in spring. We cannot tell why the snow-drop shoots up amidst frost and snow its tender stem and delicate blossoms, while the more robust lily, with a stem thicker than a walking-stick, and a large hardy-looking flower, dare not shoot into blossom before the full sunshine of summer. But proofs of the same ignorance, as we gaze on the works of God, are abundant: let them, then, teach us how little, comparatively, we know, and lead to true humility of spirit.

The Christmas rose, which invites our notice, is not very much like the queen of flowers, though it bears its name, except in the pale rosy white of its bunch of blossoms. Sometimes they expand in mid-winter, but they commonly wait till May before blowing. The dark dusky colour of its rootstock has led to its being called by the name of the black hellebore, which is poisonous, but, in many cases, useful for medical purposes. The ancients employed it in cases of madness; but it is seldom used by our own practitioners, except as an ointment.

The Chinese primrose, a flower recently introduced, has become a general favourite for pots in windows; but, unless in very mild seasons, it will not answer in open gardens. The common colour is a pale tint, somewhat between pink and lilac, though some varieties are darker, and some quite white. Its gay appearance in winter, when few flowers are to be seen, makes it a valuable addition to our old stock. The habit, adapted to the climate of China, of flowering in the Chinese spring, causes this pretty flower to blow in our early winter, in the same way as the chrysanthemums and camelias, without forcing, and with nothing more than protection from cold. Any increase beyond the temperate is sure to prove injurious. Too much moisture

also greatly tends to prevent a fine bloom, and renders the plants bloated and dropsical.

Another flowering plant from the far east, is the Japan corchorus. It is more hardy than the preceding, and flowers out of doors during a great part of the winter, as well as at other seasons, in situations where it thrives. In some soils and aspects it will not flower at all; in others it blows most profusely. Its yellow flowers resemble those of the dandelion in miniature.

The garden anemone is a very gay and showy flower at this season, if it has been planted at the proper time. It is surprising that its beauty has not rendered it more common than it appears to be; but, perhaps, the reason is, that few take much pleasure in their gardens in the winter, when it is too damp and cold to walk about with comfort. Were an effort made to grow this plant in pots for rooms, there can be little doubt that it would prove successful; it would certainly be a fine ornament to our windows, and would harmonize well with the Chinese primrose and Christmas rose.

The common primrose, now partially in flower out of doors, is sometimes reared in pots to flower within doors. It is a pretty flower; its delicate odour reminding us of the budding of trees in the spring, and all their accompaniments of brightening skies and singing birds.

DECEMBER.

The polyanthus may also often be seen in bloom, as well as the mezereon and the daisy. And, in sheltered borders, the snowdrop, towards the end of the month, peeps timidly forth, and discloses its bell-like blossoms.

We pass now from these to other objects. See there the hardy furze, which covers the common, is putting forth its golden blossoms, in beautiful contrast with the green of its thorny stem. This shrub, which is very abundant, forms in summer a fortress, guarded by an array of spears, to which many of our smaller birds repair to build their nests. In winter, it offers, beneath its dense canopy, an asylum for various animals, which there find security and concealment. There the hedgehog often hybernates, as the torpid state of many creatures in winter is commonly called; and field-mice and shrews make their burrows. There, too, the vipers crowd together for the sake of mutual warmth, in some snug recess, and pass the colder months. There also the lizard secures a dormitory.

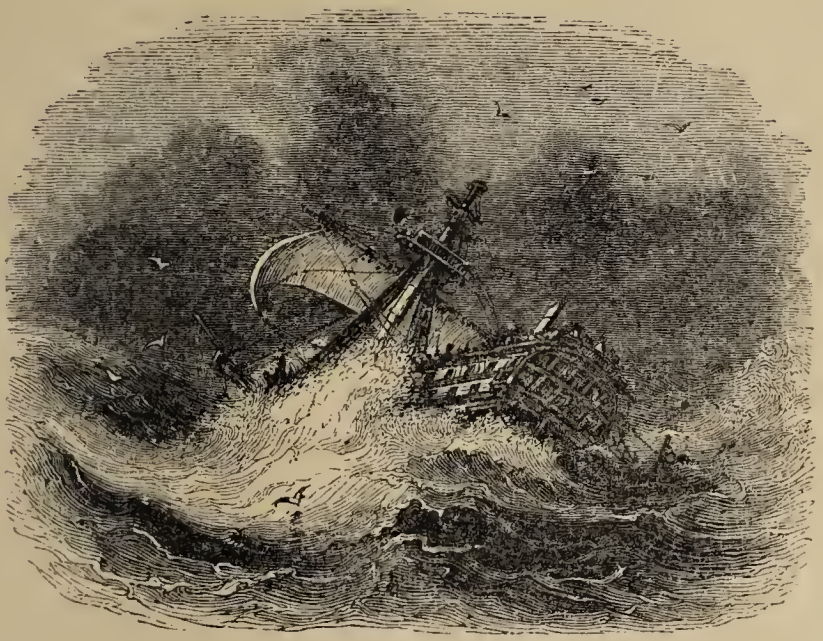
It may be, however, that our walks and observations at this season will be impeded. Rain may fall heavily, for much humidity is frequently experienced. Constantly afforded to the air by evaporation, it is returned to the earth chiefly, though not entirely, by the agency of rain. According to the theory now

prevalent, rain is supposed to result from the mingling together of great beds of air of unequal temperature, differently stored with moisture. The following rhymes are popular in the West of England, and they accord with the theory of philosophy which has been commonly adopted:—

"The south wind always brings wet weather;
The north wind wet and cold together;
The west wind always brings in rain;
The east wind blows it back again."

To the power of the wind the attention will now perhaps be often directed. As it whistles around, or its loud rushings and blasts are heard, we shall think of

the mariners wafted onwards by a favourable breeze, suffering from the fury of the storm, or experiencing the bitter calamities of shipwreck. Such circumstances



claim our sympathy; and those who sail on the mighty deep should be remembered when we present our petitions at the footstool of the "Preserver of men."

"A winter night! the stormy wind is high,
Rocking the leafless branches to and fro:
The sailor's wife shrinks as she hears it blow,
And mournfully surveys the starless sky.
The hardy shepherd turns out fearlessly
To tend his fleecy charge in drifted snow;
And the poor, homeless, houseless child of woe
Sinks down, perchance, in dumb despair to die!

Happy the fire-side student; happier still
The social circle round the blazing hearth;
If, while these estimate aright the worth
Of every blessing which their cup may fill,
Their grateful hearts with sympathy can thrill,
For every form of wretchedness on earth."

The poet here reminds us that moisture cannot always descend in rain. The region of air in which atmospheric beds of unequal humidity and temperature unite, is subject, like the surface of the earth, to various changes. During the season of winter, when the atmosphere frequently sinks below the freezing point of water, the particles of moisture must, in some stage or other of their descent, become frozen, and form flakes of snow. These display innumerable varieties of the most beautiful forms, and at length reach the ground in the same state, when the temperature necessary for their first formation continues to the surface of the earth.

Cowper has thus admirably described the falling snow:—

"I saw far off the weedy fallows smile
With verdure not unprofitable, graz'd
By flocks, fast feeding, and selecting each
His fav'rite herb: while all the leafless groves
That skirt th' horizon wore a sable hue,
Scarce noticed in the kindred dusk of eve.
To-morrow brings a change, a total change!
Which even now, though silently perform'd,
And slowly, and by most unfelt, the face
Of universal nature undergoes.

Fast falls a fleecy show'r: the downy flakes
Descending, and with never-ceasing lapse,
Softly alighting upon all below,
Assimilate all objects. Earth receives
Gladly the thick'ning mantle, and the green
And tender blade, that fear'd the chilling blast,
Escapes unhurt beneath so small a veil."

Snow, when examined by the microscope, is found to be composed of an immense number of separate transparent crystals of ice. In the Polar regions their

SNOW CRYSTALS.

variety seems endless; and while a given character pervades the whole, the groupings produced by combination disclose arrangements uniting at once the most perfect forms of regularity and beauty. These

delicate varieties are, however, confined to the regions of the north, and only in very rare instances are some of the less complicated crystals to be met with in the temperate climates of the earth.

After a copious fall of snow, an attentive observer may find in the scenery, to which it imparts so peculiar a character, much to exercise and delight his mind. Sometimes, when the sun shines clearly, and the temperature is too low for any moisture to be deposited, the level surface may be found to be sprinkled with small polished plates of ice, which refract the light in colours as brilliant and varied as those of dew. At such times, there are also to be discovered on the borders of frozen pools, and on small bodies which happen to be found in the ice, and project from the surface, groups of feathery crystals of a curious and delicate structure. Almost from the moment that snow alights on the ground, it begins to undergo certain changes, which usually end in its being more solidly crystallized than at first. The peculiar adhesive quality of snow, at particular times, arises from its needley crystalline texture, aided by a degree of moisture, which afterwards freezes in a mass. On some occasions snow exhibits beautiful blue and pink shades at sunset.

Snow storms sometimes present a luminous appear-

ance. One occurred some years ago, to a party on Lochawe in Argyleshire, which imparted to the glassy surface of the lake, the boat, their clothes, and all the surrounding scenery, a luminous appearance, like a huge sheet of fire; nor was this all, for the exposed parts of their bodies seemed to burn, though of course there was no feeling of warmth. When they applied their hands to any of the melting snow, the luminous substance adhered to them, as well as the moisture, and this property was retained by the snow from twelve to fifteen minutes.

A further crystallizing of the descending atoms than that which takes place in snow appears to be the cause of hail. The forms of hail are very varied, but all hailstones resulting from the same shower generally present considerable uniformity when they fall nearly on the same level. Very frequently small flakes ot snow are to be found in the centres of hailstones, and, generally speaking, this is the only dark part in them; the outer stratum having all the appearance of ordinary ice. Sometimes a small kind of hail occurs, which is scarcely solid, and whose surface appears as if covered with particles of dust, like very fine flour, and it seems, from its general texture, to occupy a sort of intermediate rank between hail and snow.

At this season, when the ground is frozen, and the snow lies deep, the timid tenants of the fields often approach the habitations of men. Hares and rabbits venture into gardens, and nibble the culinary vegetables. The tracks of the fox and polecat in the snow prove that these marauders have been roaming all night about the farmer's barns and outhouses. And when the wolf was a denizen of our uncleared woodlands, urged by want, and thus made doubly ferocious, he prowled around the hut of the peasant, and devastated the sheepfold, and the cattle-yard. During the winter, the ravages of this beast were very great: nor was man secure from his attacks.

In former times, a tribute of wolves' heads was received in Wales as an equivalent for taxes, otherwise to be paid in money; and, long after that period, lands were held on condition of hunting these animals. Yorkshire, in the time of Athelstan, so abounded with them, that places of refuge were built for travellers, tracked by sanguinary groups,

"Burning for blood, bony and gaunt, and grim."

Happily the wolf no longer disturbs the peasant with his nightly howl; but in some parts of the continent, and especially in the woody regions of the northern

countries, this animal is very common, and every winter commits extensive depredations.

The otter, well known for its destructiveness to fish, quits the small streams, which it haunts, or the lake where it dwells, should they now become frozen, and seeks broader and deeper rivers. Not unfrequently

THE OTTER.

it descends to the sea. In some cases, when the means of obtaining fish fail, it has been known to make inland excursions, and visit the farm-yard, attacking pigs and poultry; but instances of this kind are very rare.

On the other hand, the polecat has been known to pursue the captive fish, when other means of support

become scarce. During a severe storm, one of these animals was traced in the snow, from the side of a rivulet to its hole at some distance from it. As it was observed to make frequent trips, and as other marks were seen in the snow, which could not easily be accounted for, a further examination took place. Its hole was examined, the polecat was taken, and eleven fine eels were discovered to be the fruits of its nightly excursions. The marks in the snow were found to have been made by the motions of the eels in the creature's mouth.

In the colder portions of England and the continent, the stoat or ermine assumes that snowy whiteness of fur, except at the end of the tail, which renders it so much esteemed as a lining for winter garments, and for robes of state and royalty. In the southern districts of our country, the ermine seldom becomes entirely white, this colour only appearing in patches, mottling the brown. In Scotland, and the northern parts of our country, specimens of pure white are often met with; and some have been seen in this snowy garb from Ireland. Still, as it regards the fulness, softness, and purity of the colour of the fur, no British species at all equal those obtained in Norway and Siberia; nor, indeed, is the animal so abundant as to be worth

consideration as a matter of commerce. On the contrary, in the northern regions of Europe, the ermine exists in astonishing numbers: the vast forests covering, without interruption, large tracts of country, affording it food and concealment. It is only hunted during the severest months of winter; and a sufficient number remain, after the season is over, to replenish the stock. Still the destruction is immense; for in 1833, the importation of ermine skins into England alone, amounted to 105,139.

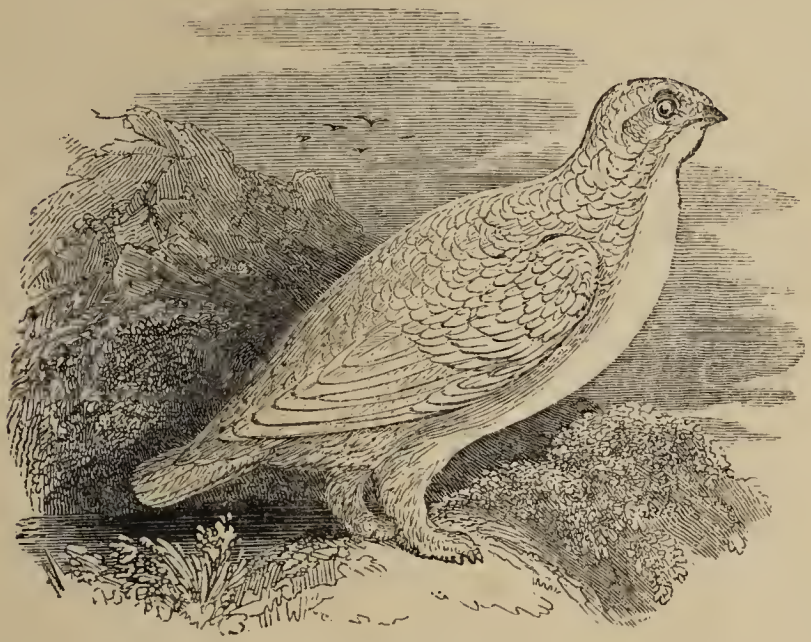
The ultimate cause of the change of colour, from a brown or richly-tinted dress, which occurs in so many of the northern mammalia and birds, may be concealment from natural enemies, by the resemblance of hue to that of the snow which covers the face of the country, and also the preservation of the animal heat, which is more completely retained when above the temperature of the surrounding atmosphere, by a white than a dark vestment. The mode, however, by which this change is produced yet remains to be pointed out, and is specially worthy the attention of the reader.

The late Colonel Montagu, whose name stands so high among the practical naturalists of our country, considered both hair and feathers, when completely developed, to have neither circulation, nor a power of

secretion, or absorption. He thus expresses his opinion, which he had formed with care:—"Some species of birds seem to change their winter and summer feathers, at least in part: in some, this is performed by moulting twice a year, as in the ptarmigan; in others, only additional feathers are thrown out; but we have no conception of the feathers changing colour, although we have been informed of such happening in the course of one night."

Dr. Fleming, on the contrary, contends for a change of colouring, and not of hair or feathers, and adduces, in confirmation of his opinion, among other examples, that of an ermine which was shot on the 9th of May, 1814, in a garb intermediate between its summer and winter dress. On all the under parts the white had nearly disappeared, in exchange for the primrose yellow, their ordinary tinge in summer; but the upper parts of the body had not yet acquired their summer colour, which is a deep yellowish brown. There were several white spots, and not a few with a tinge of yellow; and upon examining these white and yellow spots, not a trace of interspersed new short hair could be discerned: this would certainly have been the case if a change of colour was effected by a change of fur. Besides, while some parts of the fur on the back had acquired their

proper colour, even in those parts, numerous hairs could be observed, of a wax yellow; and in all the intermediate stages, from yellowish brown, through yellow to white, proving that the white hairs were regaining their summer hue. Again, in reference to the analogous change in the plumage of the ptarmigan,



THE PTARMIGAN

he observes, that the young birds have their first plumage mottled, chestnut, brown, and black, similarly to that of their parents; but they become white in winter, and again mottled in spring. Now, these young

birds, provided the change of colour is effected by moulting, must therefore produce three coverings of feathers in the course of ten months. This is a waste of vital energy, which no bird, in its natural state, can be supposed to be capable of sustaining, as moulting is the most weakening process they undergo. In birds of full maturity, two moultings must be necessary; one on the approach of winter, and one on the return of spring. It is, however, remarkable, that in these changes the range of colour is from brown, through grey to white, a transition so nearly resembling that which takes place in the fur of the ermine, that Dr. Fleming is disposed to regard the change of colour to be effected in the old feathers, and not by the accession of new plumage in place of the old, the change being independent of the ordinary annual moulting of the birds.

In corroboration of Dr. Fleming's views, the following statement by Sir John Ross may be adduced. It relates to that little animal, the Hudson's Bay lemming, an individual of which lived for several of the winter months in his cabin. "Finding that, unlike what occurred in our tame hares, under similar circumstances, it retained its summer fur, I was induced to try the effect of exposing it, for a short time, to the winter

temperature. It was accordingly placed on deck, in a cage, on the 1st of February; and next morning, after having been exposed to a temperature of thirty degrees below zero, the fur on the cheeks, and a patch on each shoulder, had become perfectly white. On the following day, the patches on each shoulder had extended considerably, and the posterior parts of the body and flanks had turned to a dirty white: during the next four days, the change continued but slowly; and at the end of a week, it was entirely white, with the exception of a dark band across the shoulders prolonged posteriorly down the back, forming a kind of saddle, where the colour of the fur had not changed in the smallest degree. The thermometer continued thirty or forty degrees below zero until the 18th, without producing any further change, when the poor little sufferer perished from the severity of the cold. On examining the skin, it appeared that all the white parts of the fur were longer than the unchanged portions; and that the ends of the fur only were white so far as they exceeded in length the dark-coloured fur; and, by removing these white tips with a pair of scissors, it appeared in its dark summer dress, but slightly changed in colour, and precisely the same length as before the experiment."

Here then, in an animal which does not naturally become white in winter, we find, when cruelly subjected to an extremely low temperature, that the hairs not only lengthen, adding fulness to the fur; but they actually begin to assume a white tint, which, had the animal lived, would doubtless have disappeared on the return of warmer weather.

It may here be observed, that this change is not one dependent on season, but on temperature; for, in mild seasons, and sheltered situations, it does not occur. Two ermines, or stoats, were met with alone in their white dress, in two of the most different winters that occurred for several years. One was the extremely severe one of January to March, 1823; and the other was in the extremely mild one of January, 1832.

In consequence of the great mildness of the months of December, 1831, and January, 1832, an observer was surprised to see a stoat in his winter fur; and the more so, because, three weeks or a month before, he had seen another stoat in his summer coat of brown fur. He was, therefore, led to consider whether the respective situations of the brown and white stoats he had observed this warm winter could alone account for the difference in their colours in any satisfactory manner.

And what was the result? The situation where the brown stoat was seen is in north latitude fifty-four degrees and nearly thirty-two seconds, and west longitude one degree nineteen seconds nearly, upon a plain elevated a very few feet above the river Tees, in the county of Durham. Again, the place where he met with the ermine, or white stoat, in January, 1832, is in the North Riding of Yorkshire, in north latitude fifty-four degrees twelve seconds nearly; and west longitude one degree thirteen seconds nearly. It is situated upon a very elevated situation, and in the immediate neighbourhood of the lofty moorlands, called the Hambledon hills. These constitute the south-western range of the Cleveland hills, which rise in height from one thousand one hundred to one thousand two hundred feet above the sea.

At the time referred to, the ermine was making its way towards the hills, where no doubt he lived, or where he frequently haunted; and, consequently, the great coldness of the atmosphere, even in so mild a winter, would satisfactorily account for the appearance of the animal in the white fur, although the place is, in a direct line, more than twenty-three miles south of the fields near the Tees, inhabited by the brown stoat in question. If, then, the change alluded to were the

result of a law of season only, and therefore produced by a renewal of fur, it would take place whether in cold or mild winters, in cold or sheltered situations. The opposite, however, appears to be the case: the provision for the comfort of inferior creatures, which we have been considering, is made for them by the God of providence, when they need it; but is only made for them then.

A herring-gull was examined at Christmas by Mr. Yarrell, when he found that several of the tertial wing feathers had their basal halves of a blue grey, the remaining parts being mottled with brown. Two notches were made with scissors in the webs of these feathers, as marks of reference to the two colours then present. Some other feathers were only mottled with brown, and were therefore marked with only one notch. The bird was re-examined in April; the tertial feathers, which when marked were of two colours, were now found to be entirely of a blue grey, the brown having disappeared; one was even tipped with white. The other feathers, which when marked were wholly mottled, were now, for two-thirds of their length, of a pure white, the terminal third alone remaining of a mottled brown.

In another example, namely, the black-tailed godwit,

black markings began on the lowest part of the breast and belly on the 24th of February; three days afterwards, Mr. Yarrell observed that the feathers on the upper part of the head, neck, and breast, began to change colour from dusky brown to red. On the 29th, he found that the scapularies, the wing coverts, and the tertials had begun also to change their colour. By the 29th of April, the bird had arrived at the full colour of the breeding plumage That the change going on in this bird since the 24th of February, was absolutely an alteration of colour, and not produced by moulting, is proved by the fact, that he examined the bird day by day; the change, he states, commenced at the base of each feather, the tip being the last part that altered in colour.

Now, although these, and many other experiments, prove beyond a doubt that feathers do both assume and lose colour; and that in some birds the change in their livery is to be attributed to this circumstance alone, still it is not pretended that it is exclusively the case in every instance. Various birds, besides a change of colour, acquire ornamental plumes on the approach of the breeding season, which they moult off as soon as that period is over, and with them lose the rich tints which overspread the rest of their plumage.

The ruff offers a case in point. In spring the male of this bird assumes a full frill, consisting of lengthened feathers, arising from the neck and throat, while tufts spring one from each side the head, behind the eyes;

THE RUFF

and it is farther remarkable, that in no two individuals is the colour of this ornamental temporary frill alike, nor in the same bird for two successive years. The following instance of this partial moulting, is from a paper of Mr. Yarrell's, who has given particular attention to the subject. "About the 24th of May, the male

of the beautiful mandarin duck commenced moulting off his ornamental breeding plumage; and by the 3d of July he so much resembled the female, that it was a matter of some difficulty to distinguish them, except by a close inspection. He remained in this state until the 22d of August, when he began to shed the feathers which were to be replaced by others of a more brilliant colour, and on the 25th of September he appeared in his perfect breeding plumage. In this last moulting, the bird did not shed all its feathers, but only those ones which gave place to new ones of a more brilliant colour."

Thus far have we been led, by observing the changes which take place in the fur of the stoat, and variable hare, and in the plumage of the ptarmigan, during the rigours of winter, to enter into the laws on which they are based. They speak of almighty power and wisdom, and prove how, in the minutest, and, as we thoughtlessly call them, the most trifling things, no less than in the most momentous, God is present. But, the trifling and momentous, the minute and the great, are words designating the value of things only in our weak and limited comprehension. The Christian philosopher sees the goodness of God in the feather which clothes the ptarmigan of the mountains, and in its changes; in the

fur of the ermine, and in its marvellous transitions; in the laws of migration and hybernation; and in the appointment of each living creature to its destined mode of life, according to the organs and instruments which God has given. Man's destiny is above the tenants of the earth and waters; but high as he is, and great as are the purposes of God towards him, and well as he may be assured of them, how often does he forget the God of all his mercies, and slight his commands! how often does he shut his eyes from beholding God in creation, in providence, and in grace! Let, then, the objects which he may now contemplate, recall his wandering thoughts, and fix them on Him whose perfections are manifest in them all.

Personifying Winter, Cowper thus addresses him:—

"Thou holdest the sun
A prisoner in the yet undawning east,
Shortening his journey between morn and noon,
And hurrying him, impatient of his stay,
Down to the rosy west; but kindly still
Compensating his loss with added hours
Of social converse, and instructive ease,
And gathering, at short notice, in one group,
The family dispersed, and fixing thought,
Not less dispersed by daylight and its cares.
I crown thee king of intimate delights,
Fire-side enjoyments, home-born happiness,
And all the comforts that the lowly roof
Of undisturbed retirement, and the hours
Of long, uninterrupted evening, know."

To such circumstances, however, delightful as they are, we must not be restricted. The pleasures of the

evening are to be preceded and followed by the duties of the day. And if we consider it one of them to trace the hand of the Great Father of all, in his various operations, we shall feel constrained to say, with Barton:—

"Thou hast thy beauties: sterner ones, I own,
Than those of thy precursors; yet to thee
Belong the charms of solemn majesty
And naked grandeur. Awful is the tone
Of thy tempestuous nights, when clouds are blown
By hurrying winds across the troubled sky;
Pensive when softer breezes faintly sigh

Through leafless boughs, with ivy overgrown.
Thou hast thy decorations too; although
Thou art austere: thy studded mantle, gay
With icy brilliants, which as proudly glow
As erst Golconda's and thy pure array
Of regal ermine, when the drifted snow
Envelopes Nature; till her features seem
Like pale, but lovely ones, seen when we dream."

JANUARY.

JANUARY.

'O Winter, ruler of th' inverted year,
Thy scatter'd hair with sleet-like ashes fill'd,
Thy breath congeal'd upon thy lips, thy cheeks
Fring'd with a beard made white with other snows
Than those of age, thy forehead wrapp'd in clouds,
A leafless branch thy sceptre, and thy throne
A sliding car, indebted to no wheels,
But urg'd by storms along its slipp'ry way,
I love thee, all unlovely as thou seem'st,
And dreaded as thou art!"

COWPER.

THE new year begins its career in winter: sometimes it is ushered in by clouds and storms, and yet we hail its approach. The old year, with its sorrows and joys, its hopes and fears, its gratifications and disappointments, has fled. Its chequered months have passed into eternity, and we stand on the margin of the untried future, over which hangs a dense cloud, receding only in proportion as we advance, so as merely to lay bare the present, while all beyond it is unseen. We know not what a day may bring forth. Let us then use the present, and be thankful that it is ours to employ and improve.

How a Christian should use it depends upon the circumstances in which he is placed,—the exigencies and the duties of the hour. But, among all his pursuits, he will not forget his God, or heedlessly pass over the operations of the great Creator, whose Spirit, at the beginning, "moved upon the face of the waters," and who still sustains all that he made by the word of his power. No! as he looks upwards and around, he will say:—

"These are thy glorious works, Parent of good.
——Thyself how wondrous then!"

It is not uncommon for the close of the year to be comparatively mild, and the early part of the new one to be very inclement. In this case,

"The keener tempests rise; and fuming dun,
From all the livid east, or piercing north,
Thick clouds ascend; in whose capacious womb
A vapoury deluge lies, to snow congealed.
Heavy they roll their fleecy world along,
And the sky saddens with the gathered storm.
Through the hushed air the whitening shower descends,
At first thin wavering; till at last the flakes
Fall broad and wide, and fast dimming the day
With a continual flow. The cherished fields
Put on their winter robe of purest white.
'Tis brightness all; save where the new snow melts
Along the mazy current. Low the woods
Bow their hoar head; and ere the languid sun
Faint from the west emits his evening ray,
Earth's universal face, deep hid, and chill,
Is one wild dazzling waste, that buries wide
The works of man."

Other results peculiar to the season follow. Many of these are graphically and correctly exhibited by our

SCENE IN WINTER.

poet Thomson, whose "Winter" will yield much pleasant and instructive reading for the domestic and social circle, while snow is thickly falling, or the

wind is howling about their dwelling. Thus he says:—

"It freezes on;
Till Morn, late rising o'er the drooping world,
Lifts her pale eye unjoyous. Then appears
The various labour of the silent night.
Prone from the dripping eave, and dumb cascade,
Whose idle torrents only seem to roar,
The pendent icicle; the frost-work fair,
Where transient hues and fancied figures rise;
Wide spouted o'er the hill, the frozen brook,
A livid tract, cold-gleaming on the morn;
The forest bent beneath the plumy wave;
And by the frost refined, the whiter snow,
Incrusted hard, and sounding to the tread
Of early shepherd, as he pensive seeks
His pining flock, or from the mountain top,
Pleased with the slippery surface, swift descends."

Ice is formed in various degrees. Sometimes there is but little, and it is only the careful observer that will find any. Far more commonly there is much, and it is generally so in the northern parts of our country. Now,

"The loosened ice,
Let down the flood, and half dissolved by day,
Rustles no more; but to the sedgy bank
Fast grows, or gathers round the pointed stone,
A crystal pavement, by the breath of heaven
Cemented firm; till, seized from shore to shore,
The whole imprisoned river growls below.
Loud rings the frozen earth, and hard reflects
A double noise; while, at his evening watch,
The village dog deters the nightly thief;
The heifer lows; the distant waterfall
Swells in the breeze: and, with a hasty tread

Of traveller, the hollow-sounding plain
Shakes from afar. The full ethereal round,
Infinite worlds disclosing to the view,
Shines out intensely keen; and, all one cope
Of starry glitter, glows from pole to pole.
From pole to pole the rigid influence falls,
Through the still night, incessant, heavy, strong,
And seizes Nature fast."

All substances, whether liquid or solid, contract when cooling; but in reference to water in such circumstances there is a law which is very different, and very peculiar. Water indeed contracts as the cold increases, but the instant it has cooled down as far as thirty-nine degrees of Fahrenheit, it ceases to do so. Nay, at a still lower temperature it begins again to expand, and continues to do so down to the freezing point. So considerable is the power of expansion, that the strongest metallic vessels, if completely filled with water and closely shut, are seen to burst during the process of freezing. This irresistible power is applied to many important purposes.

A heavier fluid sinks below that which is lighter, as is evident on pouring water on oil. In the same way the heavier particles of water descend into those which are lighter. What takes place on a lake, for instance, at the commencement of the cold of winter? The water on the surface, being in immediate contact with the cold atmosphere, begins to have a lower temperature.

It contracts, becomes heavier, and sinks down into the water below, which being warmer and lighter, rises in its turn to the surface. The movement goes on till the water which is uppermost has acquired a temperature of about thirty-nine degrees; still it has a tendency to sink, but this is lost the moment it cools down below that point; for when it begins to expand, it becomes lighter, and swims on the warmer water below. What then is the consequence? Water of a lower temperature than thirty-nine degrees can never reach the bottom of the lake. Deep lakes can never, therefore, be frozen to the bottom. And from this law important results arise.

According to Professor Bischof, to whom we owe much information on the subject, the temperature of the lower regions of the lakes of Switzerland, amounts, at all seasons, to from forty-one to forty-three degrees. The cause of its never being exactly thirty-nine degrees, is ascribed partly to the internal heat of the climate, and partly to the fact, that water of the temperature of thirty-nine degrees never reaches the bottom without being mixed with some of the warmer particles through which it passes. The same temperature is common to all the lakes of the north and south countries of Europe, as the lakes of Sweden, Norway, and Lower Germany,

as well as those of the Alps and Italy. We see, then, why the same species of fish are found in lakes belonging to very different climates. The fish inhabiting the lakes of the north of Sweden swim about in their native element, at the depth where the water is constantly the same temperature. What a beautiful instance is here of providential care!

To no mind short of the Infinite would it ever have occurred to deviate in the contraction of water from the given law relating to the contraction of other bodies Apart from this it would have contracted as far as the freezing point. In one severe winter, therefore, the waters of this and other countries would have been frozen to the bottom, and the fish, and every other creature in them, would certainly have perished. Now a totally different state of things appears. A continued frost is requisite to reduce the temperature of deep lakes to thirty-nine degrees. If it operate still longer, a thin layer of water at the surface begins to undergo the process of freezing. The crust of ice that is forming slowly increases downwards, but on the appearance of thaw, its growth is immediately arrested. Under this cover, the fish continue in an active and lively condition, because the region in which they move about, preserves, summer and winter, the same tempera-

ture. A few warm days of spring are sufficient to melt the ice, and destroy every trace of winter. The sea has a resemblance to lakes, but the water of the former, owing to its saltness, takes much longer time to freeze than that of the latter.

Ice is lighter than water, not merely to prevent universal ruin and desolation, but also to confer on us signal benefits. The whole coast, extending from Holland to Russia, for instance, is deficient in rocks. Not one is to be seen in that direction. But at an early period, large ice islands were laden with the rocks of Sweden; "they landed," says Professor Bischof, "on the coast of the Baltic, then still under water. They divested themselves of their burden, depositing the stones in localities where they are now found under the name of 'erratic blocks.' They consist chiefly of large pieces of granite porphyry, and are employed for decorating the bridges and museums of Berlin, as also for paving the highways and public roads of Brandenburg. Our countrymen on the Baltic enjoy the possession of these stones merely because ice is lighter than water."

The irresistible power of water when in the act of freezing is also brought into beneficial effect. When man wishes to reduce a mass of rock, he brings gun-

powder into operation. So it was in the explosion of the Round Down Cliff, near Dover,—when it was found necessary to reduce it, to allow of the completion of the South-Eastern Railway,—on which fifteen thousand pounds of gunpowder were expended. But gunpowder is a product of art; there is none in nature. The same result is therefore attained by freezing water. Simple indeed is the means, but the effect is truly amazing. Water falls on the mighty mass, it drops into its crevices, there it freezes; and as expansion takes place, disruption follows. The ice, in severing the rocks, acts like a wedge, to which they never fail to yield. On its beginning to melt, it assists in loosening the rocks and in hastening their destruction. The process is repeated until the stone is completely reduced, and the sterile rock becomes at length a fruitful mould.

Thunder and lightning, frequent in other seasons, are not entirely unknown in winter. Montgomery has connected with their occurrence a moral, when he said:—

"The flash at midnight!—'twas a light
That gave the blind a moment's sight,
Then sunk in tenfold gloom;
Loud, deep, and long, the thunder broke,
The deaf ear instantly awoke,
Then closed as in the tomb:
An angel might have passed my bed,
Sounded the trump of God, and fled.

So life appears:—a sudden birth,
A glance revealing heaven and earth,
It is, and it is not!
So fame the poet's hope deceives,
Who sings for after-times, and leaves,
A name—to be forgot:
Life is a lightning flash of breath,
Fame but a thunder-clap at death."

WINTER LIGHTNING

Winter, often remembered only by its rigours, has, however, its milder beauties, and some which are indeed exceedingly attractive. Go, for instance, to the window some morning, as soon as you rise; if

you sleep too long, you may miss the sight altogether:

> "And see where it has hung th' embroider'd banks
> With forms so various, that no pow'rs of art,
> The pencil or the pen, may trace the scene!
> Here glitt'ring turrets rise, upbearing high
> (Fantastic misarrangement!) on the roof
> Large growth of what may seem the sparkling trees
> And shrubs of fairy-land. The crystal drops,
> That trickle down the branches, fast congeal'd,
> Shoot into pillars of pellucid length,
> And prop the pile they but adorn'd before.
> Here grotto within grotto safe defies
> The sunbeam: there, emboss'd and fretted wild,
> The growing wonder takes a thousand shapes
> Capricious, in which fancy seeks in vain
> The likeness of some object seen before.
> Thus Nature works as if to mock at Art,
> And in defiance of her rival pow'rs;
> By these fortuitous and random strokes
> Performing such inimitable feats,
> As she with all her rules can never reach."

Nor let it be supposed, that there is not much well worthy of observation when the trees are leafless, and the hedges bare, and the ground either locked up by frost, or deluged with rain, when the fallow lands look dreary, and the lark has forgotten his song, and the sun, far in the south, scarce rises above the verge of the horizon, and soon finishes his course. "What is there worth looking at?" may be the question of one who goes to the window, then stirs the fire, and, shivering, creeps

closer to the blazing embers, glad that he is not obliged to go out on such a bitter day. But what then? Is there no pleasure in the winter's walk? Is there nothing to see, to afford interest and instruction? There is much! Dare the cold; let us go into the fields and lanes, let us stroll by the farm and through the wood, and see if we shall not be repaid for our exertion. Surely, too, we ought to escape the censure of Cowper: "He who can derive no gratification from a view of nature, even under the disadvantage of her most ordinary dress, will have no eyes to admire her in any."

Again, then, we pass the threshold; perhaps,

> "The verdure of the plain lies buried deep
> Beneath the dazzling deluge; and the bents
> And coarser grass, upspearing o'er the rest,
> Of late unsightly and unseen, now shine
> Conspicuous, and in bright apparel clad,
> And fledg'd with icy feathers, nod superb."

Even here is something worth looking at, and especially so, when a glance is all we may have; the beauties of winter, like those of summer, are short-lived. Hoar-frost, for instance, may decorate every branch and twig, and leaf, and blade of grass one moment, and the next be gone. But let us look now on animated nature.

"The cattle mourn in corners where the fence
Screens them, and seem half petrified to sleep
In unrecumbent sadness. There they wait
Their wonted fodder; not like hung'ring man,
Fretful if unsupplied; but silent, meek,
And patient of the slow-pac'd swain's delay.
He from the stack carves out th' accustom'd load,
Deep-plunging, and again deep-plunging oft,
His broad keen knife into the solid mass:
Smooth as a wall the upright remnant stands.
With such undeviating and even force
He severs it away: no needless care,
Lest storms should overset the leaning pile
Deciduous, or its own unbalanc'd weight."

It is very cold; yet see how well the animals, destined to endure our winter, are enabled to withstand the severity of our season. The coat of the ox is no longer short and smooth, but deep and rough, so that the rain can scarcely penetrate it. It is the same with the horse, except when pampered and stall-fed. The Shetland pony is now as rough and shaggy as any painter who loves the picturesque can desire. The fur of all the wild tenants of our heaths and woods is increased in thickness; and numberless provisions may be traced for the endurance of winter.

We miss the bat, the hedgehog, the dormouse. They may, however, soon be found; but in what circumstance? In quiet slumber—a slumber termed hybernation, during which the blood slowly circulates, the temperature of the body is reduced nearly to that

of the atmosphere, and the vital functions are almost suspended. Is not this just one remove from death? No! It is the Creator's mode of preserving from death. It is a state of insensibility, which the breath of spring will dissolve, at once restoring animation and vigour. Then, if life be spared, we shall see the bat wheel again round the tower, or the trees; the hedgehog interrupt our walks at eventide, and roll itself up at our approach; and the little dormouse will build its little nest in the thicket, when that can afford it concealment.

What a flock of small birds! They are larks, and must amount to thousands! It is the same species, whose song thrills in the blue summer sky, the minstrel appearing but a speck in the vault of heaven. The lark is only gregarious during winter. At the close of the autumn, the birds assemble in flocks, augmented by visitors of the same species from more northern regions; and the assemblage scours the country in search of food, sweeping and wheeling around the turnip-fields and fallow lands, as if to reconnoitre before they settle. Larks in winter are generally fat, and esteemed a delicacy for the table. Hence their wholesale destruction by means of a wide light net, which is thrown over them, while the birds are sleeping at night.

Hark! that is the song of a bird. How sweet and shrill! It is the wren; one of the smallest, but also one of the hardiest, of our British birds. It may be seen hopping from twig to twig, and flitting down the hedgerow, unquestionably examining the closely-covered buds, and prying into crevices for dormant insects, and their caterpillars, on which it feeds. Then suddenly it breaks forth into a clear strain, which stops as suddenly as it began.

The wren is not our only winter songster:

> "The redbreast warbles still, but is content
> With slender notes, and more than half suppress'd;
> Pleas'd with his solitude, and flitting light
> From spray to spray, where'er he rests he shakes
> From many a twig the pendent drops of ice,
> That twinkle in the wither'd leaves below."

The robin, whose cheerful note is so familiar to all, is a favourite everywhere, with his rust-red breast, and full black eye. The woodlark also, on a fine day, pours forth his melodious strain. These birds do not congregate like skylarks, during the winter season, in large flocks, but merely associate in small families of five, six, or seven, which separate in the early part of the spring. The hedge-sparrow, or winter fauvette, may also be heard warbling a gentle, yet sweet, and varied song; the thick hedge concealing the well-known

and plainly-dressed songster. These birds build in hedgerows, gardens, and orchards, before the leaves have yet unfolded.

The golden-crested wren, or gold crest, the most

THE ROBIN.

diminutive of our British birds, braves the severest weather, and may be seen flitting through the coppice and along the hedges, all life and energy. It is a strange circumstance, that in the winter of 1822,

thousands of these birds were seen to arrive on the sea shore and sand-banks of the Northumbrian coast. Many of them were so fatigued, either by the length of their flight, or the state of the wind, as to be unable to rise again from the ground. The flight must have been in prodigious quantities, as its extent was traced through the whole range of the coasts of Northumberland and Durham. There appears little doubt of this having been a migration from the more northern provinces of Europe—probably the pine-forests of Norway and Sweden, from the arrival of these birds being at the same time as that of large flights of the woodcock, fieldfare, and redwing.

What can be more graceful in its actions, or more pleasing in its colour, than the blue titmouse! There it hangs, head downwards, on that tender spray, pecking the buds in search of small caterpillars. In this pursuit, its attitudes are all quick and lively, very elegant, and amusingly varied.—It is gone; another twig is subject to its scrutiny.

There, too, is its relative, the great titmouse; remarkable for its well-contrasted colours, and its active, restless, busy habits. Little care these birds for the coldest weather: they are clad in soft deep plumage, and retire at night into barns, stables, or the holes

and chinks of old walls and trees, for security and comfort.

See, the fields, green with the rising blade, are blackened with rooks, all intent on the destruction of the larvæ of beetles, which they eagerly devour. Thus they benefit the farmer, who need not grieve at the trifling mischief they do, by dislodging some of the roots of the corn, compensated as it is a thousandfold by their services.

The redwing and the fieldfare are winter visitors. Flocks of them are wheeling around the fields; they settle under the hedges, in turnip-fields, or along the borders of coppices. They glean their scanty subsistence from the berries of the hawthorn, the dog-rose, the holly, the ivy, and the mountain ash, adding thereto snails, and the grubs and caterpillars of insects.

What a singular bird flitted by, and plunged into yonder fir-wood! It was a cross-bill. Instances of this curious and interesting bird breeding with us have been met with, though rarely. It is, however, to be regarded as an occasional visitor only. Its habits and manners remind us of the parrot. Like the parrot, though its toes are not two before and two behind, it clings in any posture, with the greatest ease, and is active in the extreme. Its bill consists of two mandibles, arched so

as to cross each other, and that not always on the same side.

The seeds of the fir constitute its principal food, and to obtain them it inserts the points of its bill between

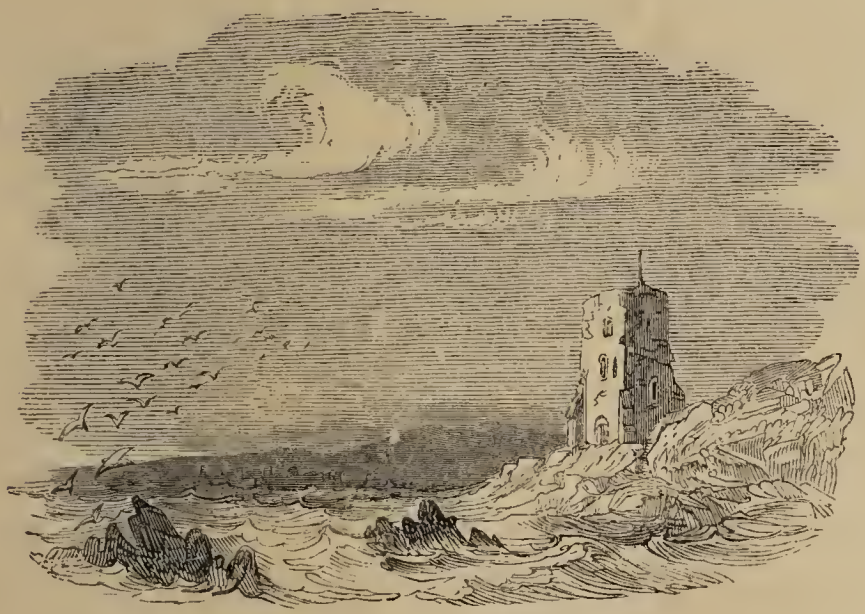
THE CROSS-BILL.

the scales of the fir-cones, and by an adroit lateral movement of the cross mandibles, wrenches open the scale, and disengages the seed, which it seizes at the

same moment. Apple and pear trees sometimes suffer, to a trifling extent, from the depredations of flocks of this bird; but more so on the continent than in our island. It visits us in inconsiderable numbers, except occasionally; for as is the case with many of our visitors, it sometimes makes its appearance in large flocks, and then for several winters it is to be looked for in vain. It is, however, one of our earliest visitors; for it breeds in the pine-forests of Germany, Sweden, and Poland, during the first months of the spring; and it is very remarkable, that, in the year 1821, as Mr. Selby informs us, this island was visited, even as early as the month of June, by immense flocks of these birds, which spread themselves through the country, and were to be seen wherever fir-trees were abundant. The greater part of the flock, as proved by the numbers killed, consisted of old females, and young birds of the year: their course was northward, as they were seen in the fir-tracts of the north of Scotland in September, after they had disappeared from the districts south of the Tweed. The appearance of a cross-bill in January gives us reason to suppose that it will stay and breed with us.

How thronged are the open lands near the sea-shore with various species of the feathered race! Wild fowl of all colours are driven from the inland parts to the

mouth of rivers, and to bays and estuaries of the sea, where they are provided with an unfailing banquet, when the lakes and marshes are locked up with frost. Curlews and whimbrels are sailing on their large and



FLOCKING OF BIRDS TO THE COAST

pointed wings; gulls are wheeling in easy undulations, and settling and rising, at home on the land, on the water, or in the air. Flocks of lapwings, distinguished by their pied livery, driven from the moorlands and waste parts of the interior to the southern shores, cover the fallow lands, like rooks searching for worms or

larvæ, or approach the marshes along the beach, eager for such food as may there be obtained. But it is in vain to attempt to number the birds which at this season haunt our shores, and draw their sustenance from the prolific waters.

Where are the reptile tribes of our island at this season? Not one is to be seen. No, the beautiful snake is torpid in its retreat; the viper is quiet in its hole; the frog lies buried in the mud of the marsh or pool; and so it is with the water-newt and the toad; and the lizard in his burrow in the brake or coppice. The food on which these reptiles live is not now within their reach, were they even active and vigorous; and their cold blood, never much exceeding that of the atmospheric temperature, loses the requisite stimulus of warmth with the decline of summer. Hence, as if aware of the torpidity to be undergone, as the means of their preservation, they each retire to their appointed dormitory.

How wonderful, how mysterious, that instinct, which the great Creator has imparted! Every creature, according to its structure, and mode of life, habits, and food, is guided and impelled by an irresistible influence. It reasons not, it dreams not of causes or effects; it is not made wiser by experience; it acts as all its species

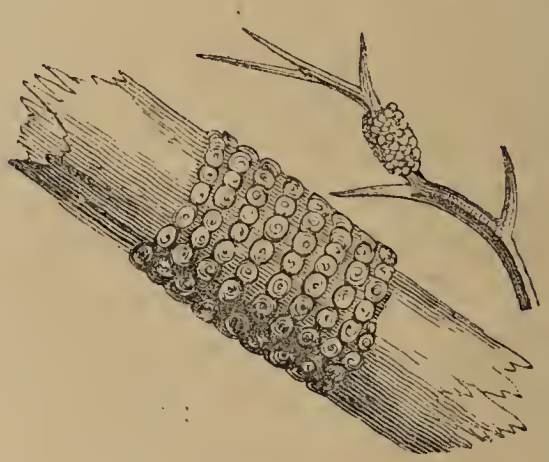
do, and ever did, and, unconscious of the part it plays in the economy of nature, fulfils its destiny, and contributes to maintain the balance of creation. To man is appointed another line of duties. For him are reserved other springs of motives and actions; his is a reasoning soul; and hence, between him and the most sagacious, or apparently sagacious brute, is a wide gulf, which cannot be filled up.

But where are the insects? Many, in a larva state, lie buried in the ground; many, unhatched in the egg, wait for spring to emerge devouring caterpillars. Many, in the chrysalis state, sleep torpid till the returning warmth shall bid them break forth from their mummy-like envelope, and expand their wings upon the breeze. But some are now alert; the transient sunshine has roused whole hosts of gnats; they are dancing as if in the exuberance of pleasure. In a few hours they will all be gone; each hastening to its concealment; but to-morrow's sun will call them forth again, should it be a genial winter's day. It may be so, it may even be more than this, for the poet's sketch was not that of fancy, but drawn from nature, when he said:—

> "The night was winter in his roughest mood;
> The morning, sharp and clear. But now at noon,
> Upon the southern side of the slant hills,
> And where the woods fence off the northern blast,

The season smiles, resigning all its rage,
And has the warmth of May. The vault is blue,
Without a cloud, and white without a speck,
The dazzling splendour of the scene below."

The naked twigs and branches enable us now to look for the eggs of such insects as deposit them in order on the smooth bark, to which they are attached by a sort of glue, which unites them to it securely. Here are the eggs of the lackey moth, and others may



EGGS OF THE LACKEY MOTH.
Natural size and magnified size of eggs round a twig of hawthorn.

be found; but here again observe the beautiful operations of instinct. No insect deposits her eggs on any tree but that, the leaves or bark of which is ordained to form the proper food of the caterpillar progeny, when hatched. She makes no mistake, for a mistake would

be fatal to the continuance of her race; and she is not left to choice in such a matter, but is directed by instinct in all she does, and acts without the slightest idea of the future.

Only for a short period can we say:—

> 'Where now the vital energy, that moved,
> While summer was, the pure and subtle lymph
> Through the imperceptible meand'ring veins
> Of leaf and flower? It sleeps; and th' icy touch
> Of unprolific winter has impress'd
> A cold stagnation on th' intestine tide."

Yes; this is all; and soon the "cold stagnation" of the fluids of the plant will entirely cease. The sap is already beginning to circulate in the roots, secured from the cold in the bosom of the genial earth. Stilly, indeed, is the work of restoration, the commencement of the functions of vitality, but it is sure, nay, it has already made great progress, and some of our hardier plants look cheerfully. The catkins of the hazel are beginning to unfold; and the daisy glints forth, scarce reared above the parent earth; the red dead-nettle, the white dead-nettle, the primrose, the grounsel, the chickweed, adorn each sunny bank; the mezereon and hepatica are about to flower, and the snowdrop is already through the ground. The mosses are green and vigorous, and the lichen tints, with its many hues,

the old gnarled trunks of trees, and the time-worn stones of ruined towers, over which the ivy, ever verdant, throws a wreath as if to hide the process of decay, or to show that for nature man himself labours, even when he ministers to his own power or glory.

Surely a winter's walk in January is not without interest. Reader, try it for yourself, using your eyes, availing yourself of a pocket microscope, training your ears to catch every sound; and when you return with the glow of health, and the animation which exercise produces, you will not repent that you have left the fireside for a season, to look at nature in "her least attractive dress." One thought, indeed, should fill you with gratitude—for what is the severity of this season in our climate, to the ice-bound regions of the north, where

> "Winter holds his unrejoicing court;
> And through his airy hall the loud misrule
> Of driving tempest is for ever heard!
> There the grim tyrant meditates his wrath;
> Arms his fierce winds with all-subduing frost;
> Moulds his fierce hail, and treasures up his snows,
> With which he now oppresses half the globe.
> There, undissolving from the first of time,
> Snows swell on snows amazing to the sky;
> And icy mountains, high on mountains piled,
> Seem to the shivering sailor from afar
> Shapeless and white, an atmosphere of clouds.
> Projected huge and horrid o'er the surge
> Alps frown on Alps; or hideous rushing down,

As if old Chaos was again return d,
Wide rend the deep, and shake the solid pole.
Ocean itself no longer can resist
The binding fury; but, in all its rage
Of tempest taken by the boundless frost,
Is many a fathom to the bottom chain'd,
And bid to roar no more: a bleak expanse,
Shagg'd o'er with wavy rocks, cheerless, and void
Of every life, that from the dreary months
Flies conscious southward "

GREENLANDERS

Again and again, as the months of winter roll onward, let the eye of the mind be directed to the starry heavens. To this lower world it is not well to confine the thoughts; for as it has been well remarked by

Dr. Duncan—"When a man confines himself to his own little locality, and looks around him on the subject earth, which his plastic hand converts from a wilderness into a garden; or on the lower animals, whom he subdues to his will, and causes, by the supremacy of his mental powers, to supply his wants and administer to his comforts; or even on the waters of the far-spread ocean, whose proud waves he conquers, and over whose trackless deserts he makes his way; or on the free and capacious air, whose fury he controls, and whose blandness he renders subservient to his pleasures or his profit—in such contemplations he may find much to foster self-complacency, and to persuade him that he is in reality that lordly being which pride and vanity delight to portray. But the scenes which astronomy unfolds are altogether of a different tendency, and ought to repress those feelings of self-love which a more partial and contracted view of his situation may excite. The voyager who has compassed the earth, when he returns to his native village, is surprised to find that everything has, in his view, contracted in its dimensions, and become comparatively mean and sordid in its appearance. The houses have shrunk into hovels; the village-green, with a broad spread lawn, has dwindled into a miserable court-yard; miles

have diminished into furlongs; and magnificent estates into sorry farms. This effect has been produced by a contrast with the expansion of his own views: and a similar result arises from the contemplations of the astronomer. Expatiating in the infinity of the universe, the things of earth seem to lessen while he regards them. As he pursues his inquiries, the contrast becomes daily more apparent and more mortifying. He begins to perceive an emptiness in those things which formerly engaged his attention and interested his affections, which he did not previously suspect. He finds himself placed on a little planet, whose comparative insignificance is such, that, were it struck from the face of creation, its fate would but be like that of a falling star, which loses itself in the heavens, and is remembered no more. And, as to himself, what an atom is he! How humbling and appalling is the thought!"

One glorious object meets our views in winter, though his light is denied to others—it is the sun.

"Thou mightiest work of Him
That launch'd thee forth, a golden-crown'd bridegroom,
To hang thy everlasting nuptial lamp
In the exulting heavens. In thee the light,
Creation's eldest born, was tabernacled;
To thee was given to quicken slumbering nature,
And lead the seasons' slow vicissitude
Over the fertile breast of mother earth;
Till men began to stoop their grovelling prayers,

From the Almighty Sire of all, to thee.
And I will add, Thou universal emblem,
Hung in the forehead of the all-seen heavens,
Of Him, that with the light of righteousness
Dawn'd on our latter days; the visitant Dayspring
Of the benighted world. Enduring splendour!
Giant refreshed! that evermore renewest
Thy flaming strength; nor ever shalt thou cease
With time coeval, even till time itself
Hath perished in eternity. Then thou
Shalt own, from thy apparent deity
Debased, thy mortal nature, from the sky
Withering before the all-enlightening Lamb,
Whose radiant throne shall quench all other fires."

FEBRUARY.

FEBRUARY.

" There is at times a solemn gloom,
Ere yet the lovely Spring assume
Sole empire, with the lingering cold,
Content divided sway to hold;
A sort of interreign, which throws
On all around a dull repose;
Dull, not unpleasing; when the rest
Nor reign, nor snow, nor winds molest;
Nor aught by listening ear is heard
Save first-fruit notes of vernal bird,
Alone, or with responsive call,
Or sound of tinkling waterfall.
Yet is no radiant brightness seen
To pierce the clouds' opposing skreen,
Or hazy vapour; and illume
The thickness of that solemn gloom.
Such is the garb, his natal morn
Ofttimes by February worn:
And such the garment that arrays
Full often his succeeding days."

MANT.

THE winter is not yet passed; the rains are not "over and gone;" yet we cannot but perceive that a change is beginning to manifest itself over the face of nature.

February is usually called a dreary month, a month of clouds, and mist, and heavy rain, when

"Driving sleets deform the day delightless."

But it is a busy month to the farmer and the gardener; it is also full of interest to the naturalist, and to him who walks through the world with his eyes open. The days have begun sensibly to lengthen; the sun has acquired some power, and now and then breaks forth, lighting up the scene with a gladsome, but transient show of brightness. Let us avail ourselves of the welcome opportunity, and, though the lands are miry and the meadows soaked with water, boldly venture forth. He who would observe nature in all her moods, must take the rough with the smooth, nor shrink from trifling and transient obstacles. Come, then, for why should we delay?

There may, after all, be nothing to endure. February is not always dull or cheerless. And the feeling is delightful when the snows are melted from the fields, and there is a soft spring-like breeze after the prevalence of cold east winds. The sunbeams, too, that break through the driving clouds, and hastily brighten the landscape, are especially welcome. Often do they yield more pleasure than the continued shining of coming seasons. But many cheerless days may come

before them; the clouds may return after the rain, yet still the heavy showers loosen the soil, enabling the roots to expand, and they supply the fluid which subserves many important purposes.

A few early flowers may probably be observed. The blossoms of the elder and the hazel begin to open, and the leaves of the currant and gooseberry expand. There is the common daisy opening to the sun. It is a favourite with all, and some one has called it "the robin" of flowers. Turn it all ways, and on every side you will find new beauty. The daisy not only shuts its "pinky lashes" at night, but also carefully folds them over its yellow disk when the weather is rainy. So completely is this done, that though acres seem covered with a white sheet when they are open, a shower will restore them in a moment to their former verdure. Here, then, is a power almost peculiar to such plants as inhabit a humid and fickle climate.

And what if there should be around much of dreariness?

"From dearth to plenty, and from death to life,
Is nature's progress, when she lectures man
In heav'nly truth: evincing, as she makes
The grand transition, that she lives and works,
A soul in all things—and that soul is God.
The beauties of the wilderness are his,
That makes so gay the solitary place,
Where no eye sees them. And the fairer forms,

That cultivation glories in, are his.
He sets the bright procession on its way,
And marshals all the order of the year;
He marks the bounds, which Winter may not pass,
And blunts his pointed fury: in its case,
Russet and rude, folds up the tender germ,
Uninjur'd, with inimitable art;
And ere one flow'ry season fades and dies,
Designs the blooming wonders of the next.'

Mosses invite attention, by the vividness of their colour, and their beauty of structure. In many directions change is visibly going on.

"See that soft green willow springing,
Where the waters gently pass,
Every way her free arms flinging,
O'er the moist and seedy grass.
Long ere winter's blasts are fled,
See her tipt with vernal red,
And her kindly flower displayed,
Ere her leaf can cast a shade.

"Though the rudest hand assail her,
Patiently she droops awhile;
But when storms and breezes hail her,
Wears again her willing smile.
Thus we learn contentment's power,
From the slighted willow bower;
Ready to give thanks and live
On the least that Heaven may give."

Many a shrub and tree will still continue without foliage. Treasured up in their vessels, however, there is a hidden life. They are not, therefore, to be considered as about to perish.

"For let the months go round; a few short months
And all shall be restor'd. These naked shoots,
Barren as lances, among which the wind
Makes wintry music, sighing as it goes,
Shall put their graceful foliage on again;
And more aspiring, and with ampler spread,
Shall boast new charms, and more than they have lost.
Then each, in its peculiar honours clad,
Shall publish even to the distant eye
Its family and tribe."

And here a fact, often overlooked, is worthy of notice. "Scarcely one of the plants," says Mr. Whewell, "which occupy our fields and gardens is indigenous to the country. The walnut and the peach come to us from Persia; the apricot from Armenia. From Asia and Syria, we have the cherry-tree, the fig, the pear, the pomegranate, the olive, the plum, and the mulberry. The vine which is now cultivated, is not a native of Europe; it is found wild on the shores of the Caspian, in Armenia and Caramania. The most useful species of plants—the cereal vegetables—are certainly strangers, though their birth-place seems to be an impenetrable secret. Some have fancied that barley is found wild on

THE POMEGRANATE.

the banks of the Semara, in Tartary; rye, in Crete; wheat, at Baschkiros, in Asia; but this is held by the botanists to be very doubtful. The potato, which has been so widely diffused over the world in modern times, and has added so much to the resources of life in many countries, has been found equally difficult to trace back to its wild condition."

"In our own country," Mr. Whewell also observes, "a higher state of the arts of life is marked by a more ready and extensive adoption of foreign productions. Our fields are covered with herbs from Holland, and roots from Germany; with Flemish farming, and Swedish turnips; our hills with firs of the forests of Norway. The chestnut and the poplar of the south of Europe adorn our lawns; and below them flourish shrubs and flowers, from every clime, in profusion. In the mean time, Arabia improves our horses, China, our pigs, North America, our poultry, Spain, our sheep, and almost every country sends its dog. The products which are ingredients in our luxuries, and which we cannot naturalize

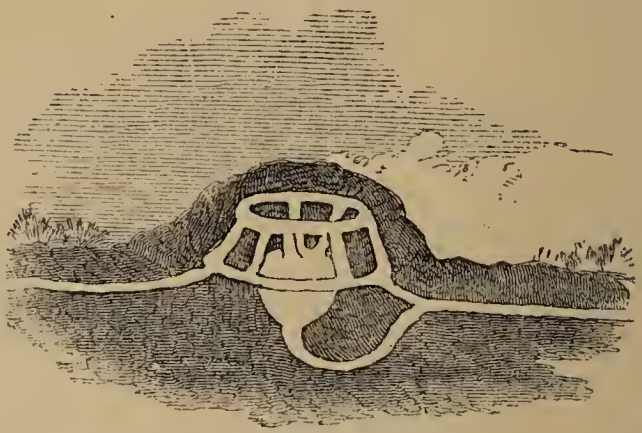
THE COTTON.

at home, we raise in our colonies; the cotton, coffee, and sugar of the east, are thus transplanted to the farthest west; and man lives in the midst of a rich and varied abundance, which depends on the facility with which plants, and animals, and modes of culture, can be transferred into lands far removed from those in which nature had placed them. And this plenty and variety of material comforts is the companion and mark of advantages and improvements in social life, of progress in art and science, of activity, of thought, of energy of purpose, and of ascendency of character."

We turn from vegetation to other objects. See how busy the earthworm is on every side! its earth-casts cover the lawn and the meadow. Great is the utility of this animal. Its operations loosen the soil, thus rendering it more porous and able to admit water, so essential to the nutriment of plants. But this is not all: the earthworm absolutely raises the surface of the soil, and that very rapidly. So much is this the case, that stones and other objects which cumber the ground become in a few months, or if large, years, buried beneath an accumulation of rich mould, the rejected nutriment of myriads of these beings, the effect of whose agency is to level and smooth, and fit the soil for

herbage. Worms, then, are pasture-makers. It is by their means that a stony, sterile field becomes an uniformly grass-covered mead; that the stones disappear beneath the turf, and that a light and porous surface is perpetually maintained. In the multitudes of these creatures we see the wisdom of the Almighty, who has destined them, feeble as they are, for the promotion, in a remote sense, of man's interest.

But the worm has its enemies; and one is now most



MOLE-HILL AND GALLERIES

busily at work—it is the mole. See how many fresh mole-hills cover the meadow—last night's work—for the mole is a nocturnal miner. An eminent naturalist, Mr. Bell, observes, that the labours of the mole are not confined to the galleries, and passages, and vaults, which

it excavates, "but in lands newly sown, the surface of which is consequently light and yielding, after moderate rain, which has brought the earthworms to the surface, the mole follows them, and pursues its chase along the superficial layer of the soil, digging a shallow continuous trench, in which work it advances with great rapidity." These shallow trenches being only just beneath the surface, their course may be often traced by a slight elevation, the animal having arched up the roof of the winding gallery by the pressure of its own body, as it forced its way through the yielding soil. "The district or domain to which a single mole confines himself may be termed its encampment. Within its limits, or, at least, in immediate communication with this district, all the labours of this animal are confined. It consists of a habitation or fortress, from which extends the high road by which the animal reaches the opposite extremity of the encampment; and of various galleries or excavations, opening into this road, which it is continually extending in search of food, and which, in fact constitutes its hunting ground." The fortress is formed under a large raised hillock.

Moles seldom intrude on each other's hunting ground; but should two meet in the same excavation, one must retreat, or a fierce battle ensues, which proves fatal to

the weaker of the two combatants. In the mole, the appetite of hunger amounts to frenzy, and hence, with the exception of about six hours' rest in the middle of the day, it is incessantly on the chase. Worms constitute its staple food, which it pursues during the frosts of winter to their deepest retreats; nevertheless, it also eats the larvæ of insects, and even mice, birds, lizards, and frogs. But does the question arise, Is it not in danger of being drowned during the floods of February, and indeed of other months? Not at all; in addition to its excellences as a miner, it is an admirable swimmer; and for the act of swimming its hands and feet are as well adapted as for excavating. "Surprised in its encampment," says the writer referred to, "by the floods, it seeks its safety by this means: and a friend of mine, residing at Waltham Abbey, assures me, that he has seen moles swimming very featly when the marshes of that neighbourhood have been inundated." But it is not only when it is driven to it, as a means of escape from danger, that it employs this means of travelling. It will not hesitate to cross a brook, or even a broad river, to change its hunting ground, or to emigrate from a district which has ceased to afford it sufficient nourishment; and occasionally it would appear to take the water merely for the purpose of enjoying the luxury

of a bath. The mole has his enemies, and man amongst the number. The mole-catcher has already begun to set his traps.

Let us pass through the wood. The squirrel is very busy and alert; how nimbly he ascends the trunk of that fine beech tree! how soon he is hidden among the topmost branches! Truly is it said:—

"He lives the long summer through,
Without a care or a thought of sorrow.
But small as he is, he knows he may want,
In the bleak winter weather when food is scant;
So he finds a hole in an old tree's core,
And there makes his nest, and lays up his store;
Then, when the cold winter comes and the trees are bare,
When the white snows are falling and keen is the air,
He heeds it not, as he sits by himself,
In his warm little nest, with his nuts on his shelf.
O wise little squirrel! no wonder that he
In the green summer woods is as blithe as can be."

And now, most probably, he has been on a visit to his store of nuts, acorns, and beech-mast, for a meal. The squirrel does not pass the winter in a state of hybernation, but, clad in warm fur, braves its severity. Instinct-directed, he accumulates various little magazines of food, snugly hidden, lest the thievish jay should discover, and pilfer his treasure. At this season they are his great, if not entire source of dependence; and who that finds in some chink, or cranny, the store, so te

speak, thus wisely accumulated, would scatter it, and rob the Ariel of the woods of his just possession?

The hybernating animals are beginning to bestir themselves. The dormouse is roused by the fitful sunshine, to peep forth and take a little food; for though it passes the severer months in a state of torpidity, it awakens when a warmer day than usual intervenes. During the present month, a sunshiny day is almost sure to call it from its dormitory; but it will return to its repose when the sun begins to decline, and the air becomes again chilly and depressing. The hedgehog, however, sleeps more soundly, and will not yet appear; rolled up in a compact ball, and invested with moss and leaves, beneath the covert of some brake, or under the roots of some old hollow tree, it waits for the warmer months to call forth the "creeping things" on which it feeds, before its profound trance will pass away. The hedgehog stores up no provision; indeed it cannot, from the very nature of its food, which consists of slugs, snails, insects, and lizards. Were it to awake, it would awake to famish; there are, therefore, wisdom and mercy in the law which ordains its hybernation.

Strange to say, the common bat occasionally appears on the wing even during the present month, and still more frequently during March. This species is the

latest and earliest on the wing of the British bats; it has been seen alert and flying even as late as December: a warm sunshiny day is sure to rouse it. Its food consists of gnats, which the same warm sunshine also calls forth; and thus it awakens to food prepared for its reception. The final retirement of this species of bat "does not depend," says Mr. Bell, "exclusively upon temperature; for although before the severe frosts set in, they continue to fly even when it is below the freezing point, they do not again appear until the time above mentioned, March, notwithstanding the thermometer may have often risen above fifty degrees of Fahrenheit. This peculiarity is easy of solution. The fondness of the animal for different species of gnats has been observed, even from the earliest period; and from the diminutive size of the common bat, it is probable that these little insects constitute its principal food. These, and many other insects, after having disappeared during the ungenial fogs and rains of the close of the autumn, often make their appearance again in smaller numbers, on every fine warm day, until the severe cold of the depth of winter finally destroys the greater part of them. The same impulse of hunger equally accounts for the appearance of the common bat in the daytime, at this

period of the year; as it is only at that time that the temperature is sufficiently elevated to summon into temporary activity its insect food."

The feathered tribes are now in activity; the raven is preparing its nest, and so is the crow; and the rook is not behind them. How full of bustle and animation is the rookery! Some are bringing sticks and twigs with which to prepare their nests, which, thus patched up, form the cradle for many a successive generation. Some are contending for the possession of a nest, to which two parties lay claim;—we suspect the law of might is the law of right with them. Some, too, are absolutely robbing their neighbours, despoiling their nests, for the sake of furnishing their own with little pain and labour. A rookery is a picture of human society, and presents, at this season, a scene of turmoil, squabbling, and misrule. In a little time, the various litigations among the contending parties will subside. "Rooks," says Gilbert White, "are continually fighting, and pulling each other's nests to pieces: these proceedings are inconsistent with living in such close community; and yet, if a pair offer to build on a single tree, the nest is plundered, and demolished at once. Some unhappy pairs are not suffered to finish their nests till the rest have completed their building. As

soon as they get a few sticks together, a party comes and demolishes the whole. As soon as rooks have finished their nests, the males begin to feed the females, and this is continued through the whole season of incubation."

THE THRUSH

The thrush is loud in song—clear, bold, and varied are his notes; nor is the blackbird silent. Listen to

those two sharp notes, reiterated with harsh emphasis; there flits the bird that uttered them, among the willows by the brook; it is the marsh titmouse, one of our early breeders. It builds in the holes of pollard willows, and the stumps of trees, near its favourite haunts; its nest is made of moss, and the fine soft down that clothes the seeds of the willow. During the winter, this active little bird associates with others of its species in small families; these are now breaking up, for the pairing season is at hand.

There stands the heron in the flooded brook, immoveable, with its neck bent and drawn in between its shoulders; its beak ready to strike, and its eye intent upon the water, watching for some unwary fish that may come within its reach. Our approach has disturbed it; away it sails on its ample wings, to some more sequestered spot. During the winter, these birds roam far and wide in search of open water; but at the latter end of this month, the scattered flock draws gradually towards its heronry; and numbers may be seen collected together, as if on a consultation, previous to the great business of the spring. In some respects, a heronry resembles a rookery; these birds build in company together on the highest trees; their nests are made of sticks lined with wool, or other soft materials,

and are large and flat, and often in contact with each other on the same branch, or tree.

Our winter birds of passage are now beginning to move northwards; files of wild-geese may be seen high in the heavens; and many of the birds which were driven from the inland parts to the coast, are beginning to return. Nevertheless, if severe weather comes on, they retrace their way. The severe February of 1838 was rendered remarkable, from the number of wild-swans by which various parts of this kingdom were visited. In the Magazine of Natural History, is the following communication from a correspondent at Blackburn, Lancashire: "The present dreadfully severe weather has driven to the estuary of, and even high up, the river Ribble, a flock of wild swans, originally twenty-seven in number. The capture of four of these has come within my own observation; the first was shot upwards of twenty miles from the mouth of the river, on February 7. The second was shot near Walton-le-Dale, about two miles up the Ribble, above Preston; this being shot by a farmer—the Goth actually had it plucked and roasted! The third was shot near Clitheroe, still higher up the river. The fourth bird came into my possession, February 17, having been killed near the embouchure of the river two days

before." During the same month, many specimens of wild swans were shot on the Thames, and in the neighbourhood of London. It is remarkable, that in the same month, the year before, after a severe storm of wind, a stormy petrel was picked up on Preston-moor alive, but completely exhausted; it survived its capture two days, and would most probably have recovered, but was killed for the purpose of mounting. The occurrence of this oceanic bird inland is very rare: but sea-gulls are often driven by the winds to a considerable distance from the shore.

Many of our native birds pair this month, besides those already noticed; as the thrush, the missel thrush, the red grouse, the partridge, the domestic pigeon; and towards its close, the yellow hammer, the goldfinch, and the ringdove, the largest of the European wild pigeons.

During the present month, many of the reptile tribes will awake from their repose to activity. The viper crawls forth to enjoy the sunshine. The ditches resound with the hoarse deep croak of the frog, and the masses of eggs, or spawn, which the female deposits, may be observed in great abundance. From these eggs spring a tadpole progeny; a truly aquatic race, with organs of respiration, adapted to the fluid in which

they as yet exclusively live, and with a rudder-like tail, their only organ of progressive motion. In a few weeks, however, the limbs will begin to be developed, the breathing vessels that were observed will disappear, the lungs will expand, the tail vanish, and the metamorphosis will end by these little creatures abandoning the water, and betaking themselves to the moist meadows and fields, in quest of food.

See yonder an insect on the wing! It is the brimstone butterfly, which precedes its race, and may be regarded as their harbinger. Here, too, is a film of gossamer, a proof that some of the spiders are already beginning to throw out their floating lines,—silken streamers.

Vegetation has already made rapid advances, and several plants and shrubs are in blossom. Of these we may count the barren strawberry, the butcher's broom, the coltsfoot, the daffodil, the sweet violet, and the snowdrop. The filbert and the willow, too, hang out their flowers; and the yew puts on a greener tint, and appears in blossom.

"What prodigies can power Divine perform,
More grand than it produces year by year,
And all in sight of inattentive man!
Familiar with the effect, we slight the cause,
And in the constancy of nature's course,
The regular return of genial months,

And renovation of a faded world,
See nought to wonder at. Should God again,
As once in Gibeon, interrupt the race
Of the undeviating and punctual sun,
How would the world admire! But speaks it less
An agency divine, to make him know
His moment when to sink and when to rise,
Age after age, than to arrest his course?
All we behold is miracle; but, seen
So duly, all is miracle in vain.

It has been well remarked by Mr. Whewell, that "the processes of the rising of the sap, of the formation of proper juices, of the unfolding of leaves, the opening of flowers, the fecundation of the fruit, the ripening of the seed, its proper deposition in order for the production of a new plant,—all these operations require a certain portion of time, which could not be compressed into less space than that of a year, or, at least, could not be abbreviated in any great degree. And on the other hand, if the winter were greatly longer than it is now, many seeds would not germinate at the return of spring."

"Now, such an adjustment," adds this author, "must surely be accepted as a proof of design exercised in the formation of the world. Why should the solar year be so long, and no longer? or this being of such a length, why should the vegetable cycle be exactly of the same length? Can this be chance? And this occurs, be it observed, not in one, or in a few species of

plants, but in thousands. Take a small portion only of known species, as the most obviously endowed with this adjustment, and say ten thousand. How should all these organized bodies be constructed for the same period of the year? How should all these machines be wound up so as to go for the same time? Even allowing that they could bear a year or a month longer or shorter, how do they all come within such limits? No chance could produce such a result; and if not by chance, how otherwise could such a coincidence occur, than by an intentional adjustment of these two things to one another—by a selection of such an organization in plants, as would fit them to the earth on which they were to grow—by an adaptation of construction to conditions; of the scale of the construction to the scale of conditions?"

The concluding paragraph of the chapter from which the preceding quotation is made, carries the view of adjustment between organized existence and the annual cycle still farther; a part of which is as follows:—"The same kind of argument might be applied to the animal creation. The pairing, nesting, hatching, fledging, and flight of birds, for instance, occupy each its peculiar time of the year, and, together with a proper period of rest, fill up the twelve months."

Here, then, we pause in our account of February. But when warmer months come on, and vegetation is fully developed, and the stagnant waters are replete with life, and when myriads of insects are on the wing, some strange and wonderful forms may be seen by the microscope, which, although too minute to be seen by the naked eye, display no less impressively the power of God in creation, than the mighty elephant, or the colossal whale; structures of infinite beauty, proclaiming design and purpose, as clearly as does the hand of man, or the constitution of the human frame.

On a review of the year, one truth is apparent:—

> "Our God is love! repeats the youthful spring,
> Our God is love! the summer days proclaim,
> Our God is love! the autumnal valleys sing,
> And winter sweetly echoes to His name."

On the benevolence of Jehovah we have not failed to dwell as we have passed through the successive seasons. Nor have we overlooked that love, which shines forth with unspeakably greater brightness in the work of redemption than in all beside. It is of great importance to store the mind with useful knowledge, but still more so is it that there should be a deep and abiding sense of our state by nature and practice as sinners. This alone will urge it to seek an interest

in the atoning blood and perfect righteousness of our Lord Jesus Christ. Until this is done, there will be the winter of the soul; it will be under the bondage of spiritual death; and in this there will be the presage, if mercy prevent not, of death eternal. Reader, take heed that this be not your present, your final condition. Inconceivably bitter is that lamentation, "The harvest is past, the summer is ended, and we are not saved" (Jer. viii. 20). If you have hitherto delayed to apply to the Saviour, go to Him *now*. "Him that cometh to me," is His own gracious declaration, "I will in no wise cast out." Repent, then, and put away your sins. Believe, and be saved. Let the humble and fervent petition arise before the throne of grace for pardon and holiness, and it shall be heard and answered.

How much delight is there to be experienced by him, who, reconciled to God through the death of his Son, gazes on the world which Christ upholds by the word of his power! "Let me suppose," says Dr. Chalmers, "that the evidence of the Christian revelation is sustained; and that the same mind which is familiarized to all the sublimities of natural science, and has been in the habit of contemplating God in association with all the magnificence which is around him, shall be brought to submit its thoughts to the captivity of the doctrine

of Christ. Oh! with what veneration, and gratitude, and wonder, should he look on the descent of Him into this lower world, who made all things, and without whom, 'was not anything made that was made.' What a grandeur does it throw over every step, in the redemption of a fallen world, to think of its being done by Him who unrobed himself of the glories of so wide a monarchy, and came to this humblest of its provinces, in the disguise of a servant, and took upon himself the form of our degraded species, and let himself down to sorrows, and to sufferings, and to death for us! In this love of a dying Saviour to those for whom in agony he poured out his soul, there is a height, and a depth, and a length, and a breadth more than I can comprehend; and let me never, never, from this moment, neglect so great a salvation, or loose my hold of an atonement made sure by him who cried that it was finished, and brought in an everlasting righteousness."

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